

REMARKS

With this Response, Applicants amend no claims and cancel no claims. Thus, claims 1, 3-13, and 15-18 remain pending in the application

As a preliminary matter, Applicants thank the Examiner for withdrawing the previous claim rejections under 35 U.S.C. § 103(a) in view of Applicants' arguments and amendments to the claims filed on August 26, 2009.

Rejections under 35 U.S.C. § 103(a)

The Office Action rejects claims 1, 2, and 3-12 under 35 U.S.C. 103(a) as allegedly being unpatentable over Saito et al. (WO 03/026835, with specific reference made through Saito et al. (US 2004/0250919)), hereinafter "Saito," in view of an English language abstract of Nakajima et al. (JP-05-000391), hereinafter "Nakajima."

With respect to the primary reference of the rejection, Saito, the Office Action asserts that Saito discloses all elements of the presently claimed invention, except that "a mixing ratio of the solder particles is less than or equal to 30wt%." The Office Action concludes that Nakajima teaches the deficiency of Saito by disclosing a "solder paste composition, wherein the solder composition contains less than or equal to 45wt% solder powder, which overlaps the instantly claimed 30 wt% or less solder powder."

Applicants respectfully traverse the rejection. Applicants note that Nakajima is directed to a cream solder composition, and the method of using the cream solder in Nakajima relies on "applying the solder solid to the parts arranged with the pads" (see Nakajima, Abstract). Accordingly, Nakajima teaches a different solder technique compared to the presently claimed

invention. While the presently claimed invention employs “a solder composition made of a uniform mixture of a liquid substance and solder particles,” wherein “the mixture of the liquid substance and solder particles has a viscosity that flows at room temperature,” Nakajima requires, in contrast, that the solder composition be in a “paste state” and applied by a rough printing technique” (see Nakajima, paragraphs [0002] and [0005]). The invention disclosed in Nakajima requires the combination of a) 6 to 20 weight% cellulose, in order that “the solder powder is more nearly substantially,” (see Nakajima, paragraph [0010]) and b) 45 or less of solder powder to avoid bridge formation. Nakajima clearly teaches that the inclusion of high amounts of cellulose is essential for the disclosed solder composition. In this regard, paragraph [0012] of Nakajima teaches that “too little content of cellulose” does not have the effect of preventing bridge formation, and the use 6 to 20weight% of cellulose is preferred.

Applicants further note that there is no disclosure or suggestion in Nakajima that a low concentration of solder powder would influence tackiness and viscosity, as asserted by the Office Action. Nakajima clearly teaches that “in order to obtain the required tackiness and viscosity,” there should be added “a tacky adhesive agent and viscosity control agent” (see Abstract, last two lines, and paragraph [0008]. Compared to a conventional cream solder paste, Nakajima does not teach reducing the viscosity.

Accordingly, Applicants note that in view of the disclosure of Nakajima as a whole, one skilled in the art would not have had a motivation to pick a low amount of solder powder without also applying an amount of 6 to 20 wt% cellulose. There is also no disclosure or reason in Nakajima to modify the disclosed composition to have “a viscosity that flows at room temperature.” Accordingly, Nakajima teaches away from the presently claimed invention.

Applicants further note that combining the teaching of Nakajima with Saito, would not lead to the presently claimed invention. The amount of cellulose of 6 to 20weight% would not lead to a composition “having a viscosity that flows at room temperature.”

In view of the foregoing, withdrawal of the rejection of claims 1, 2, and 3-12 over Saito in view of Nakajima is respectfully requested.

The Office Action further rejects method claims 13 and 15-18 under 35 U.S.C. 103(a) as allegedly being unpatentable over Saito in view of Nakajima. The Office Action alleges that Saito discloses all elements of the presently claimed method, except a solder composition “wherein the mixing ratio of solder particles is less than or equal to 30wt%.” The Office Action again relies on Nakajima for teaching a solder composition that “contains less than or equal to 45 wt% solder, which overlaps the instantly claimed 30 wt% or less solder powder, in order to obtain the required tackiness and viscosity,” which allegedly remedies the deficiency of Saito.

As pointed out above, Applicants note that Nakajima is directed to a solder paste applied by printing, and does not intend to cause a change in the viscosity of the solder paste compared to conventional solder pastes by employing an amount of 45wt% solder powder in the composition. In contrast, it appears that in order to compensate the lower amount of solder powder, Nakajima employs an amount of 6 to 20wt% cellulose as being an essential component in the solder composition in order to prevent bridge formation. Nakajima further clearly teaches that viscosity adjusting agents, binders, and tackifying agent should be added as needed, whereby these additional ingredients are not differentiated from its use in other commercially known solder pastes. Accordingly, there can be no reason seen for one skilled in the art, based on the disclosure in Nakajima, to employ a low amount of solder powder in a solder composition

without using at the same time 6 to 20wt% cellulose. However, by using 45wt% of solder powder, combined with 6 to 20wt% cellulose, as taught in Nakajima in the method of Saito, the method disclosed in Saito would not be applicable for "flowing and dipping."


Applicants respectfully request withdrawal of the obviousness rejection of method claims 13 and 15-18 as well.

CONCLUSION

In view of the foregoing remarks, the Examiner is respectfully requested to reconsider the rejections of record, and allow each of the pending claims.

If any issues yet remain which can be resolved by telephone, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully Submitted,
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March 22, 2010
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Attachment: English language machine translation of specification of JP 05-000391